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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,917	11/02/2001	Neeraj Gulati	415	9800

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EXAMINER	
SOL, ANTHONY M	
ART UNIT	**PAPER NUMBER**
2616	

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

SF

Office Action Summary	Application No.	Applicant(s)	
	10/052,917	GULATI ET AL.	
	Examiner	Art Unit	
	Anthony Sol	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

- Applicant's Amendment filed 9/06/2006 is acknowledged.
- Claims 1, 14, 18, and 19 have been amended.
- Claims 1-19 remain pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-10, 14, 15, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,412,652 ("Lu") in view of US 2003/0086368 A1 ("Limaye"), and further in view of U.S. Patent No. 6,292,463 B1 ("Burns").

Regarding claim 1,

Lu discloses a subnetwork system where the ring table includes ring provisioning tables and embedded SONET ring path identification (Col. 7, lines 56-58; claim 1 – defining a route including a working path for a permanent sub-network connection in the network of nodes from an ingress node to an egress node; claim 1 – provisioning the route).

Lu further discloses that during the initiation or reconfiguration of a SONET ring, a ring table is downloaded through a communication channel and is stored in the

memory in each of the network elements (Col. 7, lines 47-50; claim 1 – distributing a route description to each node along the route from the ingress node to the egress node; claim 1 – configuring each node along the route in accordance with the route description to provide data traffic services from the ingress node to the egress node).

Lu still further discloses that the ring table provides the necessary intelligence for the individual network elements and is used by the network elements for decision making processes, for example, autoprovisioning and self-healing operations, as well as other management functions (col. 5, lines 63-67; claims 1 – failure in the permanent sub-network connection is permitted to be corrected prior to a tear down of the permanent sub-network connection).

Lu still further discloses that upon occurrence of a failure, the ring table may be revised or modified to reflect the new provisioning of the paths (col. 13, lines 54-56; claims1 – tear down of the permanent sub-network connection).

Lu does not disclose that the network of nodes are arranged in a mesh structure nor defining a time out period to be associated with the connection and initiated in response to the detection of a failure.

Limaye discloses a SONET/SDH Mesh network architecture that restores quickly after the failure of a network element (In particular, see Fig. 1; Abstract, lines 1-2; paragraphs 28-31).

Burns discloses that upon detection of a failure in a signaling network, the signaling network attempts to re-reinitiate the setup of the affected calls for a finite time period (Abstract, lines 8-9; col. 3, lines 10-27; col. 4, 11-14; col. 7, lines 43-46).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to combine the sub-network system of Lu with the mesh network architecture of Limaye and the time-out feature of Burns. One skilled in the art would have been motivated to make the combination between Lu and Limaye because by fabricating a mesh network as a plurality of interlocking ring networks, a protected service can be restored in the event of a failure in a distributed, timely, and efficient manner (Limaye, Abstract, lines 6-9), and between Lu and Burns because signaling failure may be quickly corrected and since release of bearer channel cross-connects is very disruptive to calls if there has in fact been no failure in the bearer channels or their cross-connects (Burns, col. 2, lines 51-53).

3. Regarding claims 2-5,

Lu discloses that the ring table (DTL) is updated, as necessary, through network element to network element and/or network element to OSS communications using standard communication protocols and messages (signaling) (Lu, Col. 6, lines 3-6; claim 2 – receiving an explicit route definition from a user defining the working path; claim 3 – dynamically determining a working path including signaling nodes in the network to determine an optimal route between the ingress node and the egress node; claim 4 – creating a DTL to describe the route; claim 5 – distributing the DTL to all other nodes along the route).

4. Regarding claims 6, 7, and 10,

Lu discloses that in addition to providing path provisioning information and node provisioning information, the ring provisioning table also provides time slot interchange (TSI) information. Lu further discloses that in order to provide TSI information, the same SONET ring path ID will appear at different rows/time slots under the same column of a node to indicate that it was dropped from a first channel and added to a different channel (Lu, Col. 12, lines 9-16; claim 6 – determining if a proposed route satisfies network constraints; claim 7 – determining if resources are available in each node in a proposed route; claim 10 – determining if a proposed route satisfies predetermined node requirements for each node in the proposed route).

5. Regarding claim 8,

Lu discloses that the ring table (DTL) is updated, as necessary, through network element to network element and/or network element to OSS communications using standard communication protocols and messages (signaling). Lu further discloses that the ring table is capable of supporting SONET ring management functions including autoprovisioning (Lu, Col. 6, lines 3-9; claim 8 - determining if resources are available includes signaling each node in the proposed route to determine if resources are available in each respective node).

6. Regarding claim 9,

Lu does not disclose determining an amount of time to wait prior to clearing Resources after a failure has been detected along the route.

Burns discloses releasing bearer channel cross-connection after a specified time period has elapsed after being triggered by signaling failure.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to combine the sub-network system of Lu with the specified time period before releasing resources as taught by Burns. One skilled in the art would have been motivated to make the combination because signaling failure may be quickly corrected and since release of bearer channel cross-connects is very disruptive to calls if there has in fact been no failure in the bearer channels or their cross-connects (Burns, col. 2, lines 51-53; claim 9 - determining an amount of time to wait prior to clearing resources for the route after a failure has been detected along the route).

7. Regarding claims 14, 18, and 19,

Lu discloses that the protection channels are used for restoring normal traffic when a node failure of fiber cut occurs (col. 8, lines 28-33; claim 14 – detecting a failure in a path included in the permanent sub-network connection between an ingress and egress node; claim 18 – detecting a failure in path in the network; determining if the path includes a permanent sub-network connection; and if so for each permanent sub-network connection; claim 19 – detecting a failure in a path in the network).

Lu further discloses that the ring table provides the necessary intelligence for the individual network elements and is used by the network elements for decision making processes, for example, autoprovisioning and self-healing operations, as well as other

management functions (col. 5, lines 63-67). Lu still further discloses automatic protection switching (col. 6, lines 6-10; claims 14, 18 – determining if the failure has been corrected).

Lu still further discloses that upon occurrence of a failure, the ring table may be revised or modified to reflect the new provisioning of the paths (col. 13, lines 54-56; claims14, 18 – if the failure has not been corrected, deallocating resources associated with the permanent sub network connection; immediately clearing resources for all sub-network connections traversing the path).

Lu does not disclose that the network of nodes are arranged in a mesh structure nor initiating a predetermined time out period in response to detection of the failure and determining if the predetermined time out period has expired.

Limaye discloses a SONET/SDH Mesh network architecture that restores quickly after the failure of a network element (In particular, see Fig. 1; Abstract, lines 1-2; paragraphs 28-31).

Burns discloses that upon detection of a failure in a signaling network, the signaling network attempts to re-reinitiate the setup of the affected calls for a finite time period (Abstract, lines 8-9; col. 3, lines 10-27; col. 4, 11-14; col. 7, lines 43-46).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to combine the sub-network system of Lu with the mesh network architecture of Limaye and the time-out feature of Burns. One skilled in the art would have been motivated to make the combination between Lu and Limaye because by fabricating a mesh network as a plurality of interlocking ring networks, a protected

service can be restored in the event of a failure in a distributed, timely, and efficient manner (Limaye, Abstract, lines 6-9), and between Lu and Burns because signaling failure may be quickly corrected and since release of bearer channel cross-connects is very disruptive to calls if there has in fact been no failure in the bearer channels or their cross-connects (Burns, col. 2, lines 51-53).

8. Regarding claim 15,

Lu does not disclose retrieving a time out period value associated with the failed permanent sub-network connection and initiating a timer with the time out period value.

Burns discloses setting a countdown timer which triggers each connection manager to dismantle cross-connect after a specified time period has elapsed (Burns, Col. 8, lines 15-18).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to combine the sub-network system of Lu with the time-out feature of Burns. One skilled in the art would have been motivated to make the combination because signaling failure may be quickly corrected and since release of bearer channel cross-connects is very disruptive to calls if there has in fact been no failure in the bearer channels or their cross-connects (Burns, col. 2, lines 51-53).

9. Regarding claim 17,

Lu does not disclose storing route information associated with connection prior to tear down such that at a time for restoring the permanent sub-network connection, no

optimal routing determination is required.

Burns discloses that the connection manager of control card maintains the cross-connect table and if replacement SVC service card is brought into service, the cross-connects can be reclaimed.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to combine the sub-network system of Lu with the connection manager's cross-connect table that maintains the cross-connect information after a failure for a period of time as taught by Burns. One skilled in the art would have been motivated to make the combination because signaling failure may be quickly corrected and to reinitialize the cross-connect would take time and valuable resources (Burns, col. 2, lines 51-53).

10. Claims 11-13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu in view of Limaye, and further in view of Burns, and still further in view of U.S. Patent No. 6,343,083 B1 ("Mendelson").

Regarding claims 11 and 13,

Lu in combination with Limaye and Burns does not disclose that the predetermined node requirements include quality of service requirements for a given node and does not disclose determining if no route can be defined that satisfies the network and node requirement, and not provisioning the route.

Mendelson discloses that if the destination node is not reachable via existing VC's, the adapter needs to be able to determine whether the destination is reachable at

all over the network, and if so, what address, quality of service, security parameters and other parameters to use in establishing a new VC (Mendelson, Col. 3, lines 57-61; claim 11- quality of service requirements for a given node; claim 13 - determining if no route can be defined that satisfies the network and node requirement, and not provisioning the route).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to combine the sub-network mesh architecture system of Lu and Limaye having a time-out period of Burns with the capability to determine if the destination is reachable considering parameters including quality of service as taught by Mendelson. One skilled in the art would have been motivated to make the combination to ensure call quality is at least at the level as agreed upon with the customer in the service level agreement (Mendelson, col. 3, lines 60-61).

11. Regarding claim 12,

Lu in combination with Limaye and Burns does not disclose determining if the route can be provisioned, and if not, automatically calculating a working path that satisfies network and node requirements.

Mendelson discloses that when an adapter accepts a packet from a network, the adapter needs to be able to determine whether to transmit it on the connection-oriented network over an existing connection or to create a new connection, and if the latter, which connection-oriented network endpoint to target and what parameters should be used in the new connection (Mendelson, Col. 3, lines 47-52; claim 12 - determining if

the route can be provisioned, and if not, automatically calculating a working path that satisfies network and node requirements).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to combine the sub-network mesh architecture system of Lu and Limaye having a time-out period of Burns with the capability to determine if the destination is reachable in an existing connection or if a new connection should be created considering network parameters as taught by Mendelson. One skilled in the art would have been motivated to make the combination to ensure the connection meets the node requirements including quality of service and security parameters (Mendelson, col. 3, lines 60-61).

12. Regarding claim 16,

Lu in combination with Limaye and Burns does not disclose signaling, by one or more nodes in a path forming the permanent sub-network connection between the ingress and egress nodes, to other nodes in the path instructions to tear down the path.

Mendelson discloses that ANC 250 of Fig. 2 periodically queries the ATU-R 222 to determine the state of the activity time-out counter. Mendelson shows in Fig. 5, at some point, in step 526, the ATU-R 222 reports (claimed signaling) that a time-out has occurred. Mendelson further discloses, in response to this report, the ANC 250, in step 528, causes the ATM network 210 of Fig. 2 to tear down the VC 266, thereby releasing network resources. Mendelson still further discloses that in one embodiment, the ANC

250 initiates a tearing down of the VC 266 by sending a RELEASE message to both ATM endpoints, each of which responds by sending a RELEASE COMPLETE message (Mendelson, col. 16, lines 5-16; claim 16 - signaling, by one or more nodes in a path forming the permanent sub-network connection between the ingress and egress nodes, to other nodes in the path instructions to tear down the path).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to combine the sub-network mesh architecture system of Lu and Limaye having a time-out period of Burns with the signaling capability of nodes to cause other nodes to tear down the connection as taught by Mendelson. One skilled in the art would have been motivated to make the combination to reuse valuable node resources for other connections.

Response to Arguments

13. Applicant's arguments filed 5/22/2006 regarding claims 1, 14, 18, and 19 have been considered but are moot in view of the new grounds of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US 2003/0026281 A1 (Limaye) teaches interlocking SONET/SDH network architecture.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Sol whose telephone number is (571) 272-5949. The examiner can normally be reached on M-F 7:30am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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AMS

11/20/2006